

DESIGNER VIRUS PARTICLES AS MULTI-VALENT PRESENTATION SYSTEMS FOR POLYPEPTIDE AND PROTEIN ANTIGENS

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Cowpea mosaic virus (CPMV) is a ssRNA plant virus that displays remarkable tolerance to a variety of mutations. The availability of an infectious clone allowed more than a hundred specific insertion and site directed mutations to be made to the interior and exterior surface of the 30 nanometer icosahedral particle. Proteins and other chemical moieties have been attached to specific positions on the surface through maleimide and NHS ester chemical linkages to cysteine and lysine residues respectively. A variety of polypeptide insertions have been made on the virus surface for vaccine development and specific targeting of the particles. The precise positioning and multivalent nature of these attachments and insertions provide a novel platform for biological and chemical applications.